

CLAIMS

- 1/ A method of acquiring an image of a non-dermatoglyphic zone of the skin or of a zone of the hair in order to determine certain parameters of said zone and/or to perform a diagnosis, wherein the image acquired by means of acquisition apparatus comprising at least one non-optical sensor for obtaining information concerning the microrelief of said zone.
- 2/ A method according to claim 1, wherein the acquisition apparatus includes a sensor having an active surface that is sensitive to variations in temperature.
- 3/ A method according to claim 1, wherein the acquisition apparatus includes a sensor having an active surface sensitive to at least one electrical magnitude, e.g. electrical charge, the electrical magnitude being preferably measured by measuring capacitance or conductance.
- 4/ A method according to claim 1, wherein the acquisition apparatus includes a sensor having an active surface that is sensitive to variations in pressure.
- 5/ A method according to claim 2, wherein the active surface is defined by a plurality of individual detection cells disposed in at least one row, and preferably in a plurality of juxtaposed rows.
- 6/ A method according to claim 5, wherein the acquisition apparatus is arranged to deliver the image in digital form.
- 7/ A method according to claim 1, wherein the acquisition apparatus is arranged to acquire an image of a zone that is large enough to be statistically representative, preferably an area lying in the range about 0.2 cm² to

about 2 cm², and more preferably lying in the range about 0.25 cm² to about 1 cm².

8/ A method according to claim 1, wherein image acquisition is performed statically, without moving the sensor relative to the zone under study during image acquisition.

9/ A method according to claim 1, wherein image acquisition is performed dynamically, with relative movement between the sensor and the zone under study during image acquisition.

10/ A method according to claim 9, wherein the active surface is in the form of a strip of individual detection cells.

11/ A method according to claim 1, wherein image acquisition is performed without the sensor coming into contact with the zone under study.

12/ A method according to claim 1, wherein image acquisition is performed with the sensor in contact with the zone under study.

13/ A method according to claim 12, wherein the pressure of contact between the sensor and the zone under study is measured during image acquisition.

14/ A method according to claim 12, wherein image acquisition is performed at substantially constant contact pressure.

15/ A method according to claim 1, wherein the acquired image is a 3D image of the zone under study.

16/ A method according to claim 1, wherein the acquired image is a 2D image of the zone under study.

17/ A method according to claim 1, wherein the sensor presents spatial resolution lying in the range 10 μm to 100 μm , preferably in the range about 25 μm to 75 μm , and more preferably close to about 50 μm .

18/ A method according to claim 1, wherein the acquire image is processed in order to determine characteristic parameters of the zone under study.

19/ A method according to claim 18, wherein the processing provides information concerning the surface density of skin lines.

20/ A method according to claim 18, wherein the processing provides information concerning the anisotropy coefficient of the skin line density.

21/ A method according to claim 18, wherein the processing provides information concerning the number and the size of skin pores.

22/ A method according to claim 18, wherein the result of the processing enables a diagnosis to be established.

23/ A method according to claim 18, wherein the result of the processing enables care treatment to be recommended.

24/ A method according to claim 18, wherein the processing is performed remotely by transmitting digital data over a network, in particular the Internet.

25/ A method according to claim 1, wherein images of the zone under study that succeed one another in time and/or

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data associated with said images are stored on a recording medium.

26/ A method according to claim 1, wherein images taken at different times and/or data associated with said images are displayed simultaneously to enable the person whose skin and/or hair is under study to see the effects of treatment or to become aware of the need for treatment.

27/ A method according to claim 1, wherein the zone under study is a region of the forearm or a region of the face.

28/ An assembly comprising:

- image acquisition apparatus for acquiring an image of a non-dermatoglyphic zone of the skin or a zone of the hair in order to determine certain parameters of said zone and/or perform a diagnosis, said acquisition apparatus including a portable non-optical sensor arranged to be suitable for being brought into contact with a non-dermatoglyphic zone of the skin, in particular a region of the forearm or of the face, or with a zone of the hair, preferably having an active surface that is sensitive to temperature variations, to electrical charge, or to variations in pressure; and

- a computer tool enabling useful information to be extracted from the signals delivered by the sensor concerning the microrelief of said zone, said information relating to the state of the skin or of the hair.

29/ A computer system for implementing the method according to claim 1, in particular an Internet server arranged to:

a) receive images in digital form corresponding to a non-dermatoglyphic zone of the skin or to a zone of the hair;

b) process said images in order to determine data concerning the surface density of lines and/or the surface density of pores and/or the size of pores and/or the anisotropy coefficient of the line density;

5 c) establish a diagnosis on the basis of the data resulting from the image processing, optionally making use of comparison data; and

d) optionally, on the basis of said diagnosis, selecting a suitable care product from a predetermined
10 range of products.

30/ A computer system according to claim 29, the system being arranged to send e-mail or a message to a person who has made a connection thereto and transmitted an
15 image of the skin, said e-mail or message informing the person about the result of the diagnosis and optionally recommending a care product.

31/ A method of recommending cosmetic treatment, the
20 method comprising the following steps:

a) acquiring an image of a non-dermatoglyphic zone of the skin or of a zone of the hair, by means of a non-optical sensor;

b) processing said image in a computer system so as
25 to obtain a diagnosis; and

c) recommending care treatment in the light of said diagnosis.

32/ A method according to claim 31, wherein the image is
30 processed on its acquisition site, e.g. in premises for selling or demonstrating goods, or at home.

33/ A method according to claim 31, wherein the image is
processed remotely, in a processing center.

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34/ A method according to claim 33, wherein the image is sent to the processing center over a network, in particular the Internet.

5 35/ A method according to claim 31, including the step consisting in storing images that are acquired successively in time and/or data resulting therefrom in order to compare them and show up any improvement, for example.

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36/ A method of acquiring an image of a non-dermatoglyphic zone of the skin and/or a zone of the hair in order to determine certain parameters of said zone and/or perform a diagnosis, wherein the image is acquired
15 by means of acquisition apparatus comprising at least one non-optical sensor, said non-optical sensor being non-thermal.

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37/ A method of acquiring an image of a non-dermatoglyphic zone of the skin and/or a zone of the hair in order to determine certain parameters of said zone and/or perform a diagnosis, wherein the image is acquired by means of acquisition apparatus comprising at least one non-optical sensor, said non-optical sensor presenting
25 resolution enabling relief to be detected that is smaller than or equal to 100 μm .

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